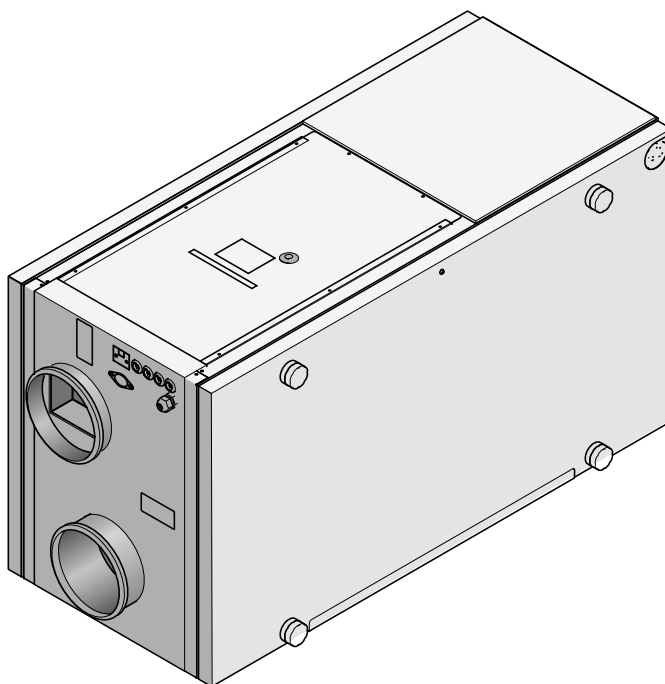


SAVE VSR 300/500



GB Installation and Service

Systemair is not liable or bound by warranty if these instructions are not adhered to during installation or service.

© 2014 Copyright Systemair AB

Systemair AB can accept no responsibility for possible errors in catalogues, brochures and other printed material. Systemair AB reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without sub sequential changes being necessary in specifications already agreed.

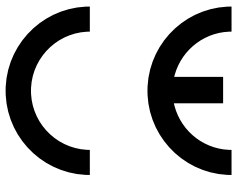
All rights reserved.

Contents

1 Declaration of Conformity	1
2 Warnings.....	2
3 About this document	2
4 Product information	2
4.1 General	2
4.2 Transport and storage.....	3
4.3 Technical Data	3
5 Installation.....	4
5.1 Unpacking.....	4
5.2 Where/how to install	4
5.3 Installation procedure	5
5.4 Condensation drainage.....	5
5.5 External connections on the unit.....	6
6 Commissioning	7
6.1 Control panel	7
6.2 Start up wizard	9
6.3 System curves	12
6.4 Airflow settings.....	15
6.5 Defrost level settings	17
6.6 Programming the Week schedule	19
6.7 Ext/Force run	20
6.8 Extra functions	20
6.9 Electrical connections	21
6.10 External connections on the print card	23
7 Before starting the system	24
8 Operation	24
8.1 Setting the temperature	24
8.2 Manual setting of airflow	24
8.3 Manual and automatic summer mode	25
8.4 Cool recovery.....	25
8.5 Service menu overview.....	25
9 Service.....	36
9.1 Warnings	36
9.2 Internal components	37
9.3 Component descriptions	38
9.4 Trouble shooting.....	40
9.5 Alarm list.....	41
9.6 Replacing rotor drive belt	42

1 Declaration of Conformity

Manufacturer



Systemair AB
Industrivägen 3
SE-739 30 Skinnskatteberg SWEDEN
Office: +46 222 440 00 Fax: +46 222 440 99
www.systemair.com

hereby confirms that the following product:

Heat recovery ventilation unit: SAVE VSR 300/500

(The declaration applies only to product in the condition it was delivered in and installed in the facility in accordance with the included installation instructions. The insurance does not cover components that are added or actions carried out subsequently on the product).

Comply with all applicable requirements in the following directives:

- Machinery Directive 2006/42/EC
- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

The following harmonized standards are applied in applicable parts:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 13857	Safety of machinery – Safety distances to prevent hazard zones being reached by upper or lower limbs
EN 60 335-1	Household and similar electrical appliances – Safety Part 1: General requirements
EN 60 335-2-40	Safety of household and similar electrical appliances – Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers
EN 62233	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure
EN 50 106:2007	Safety of household and similar appliances – Particular rules for routine tests referring to appliances under the scope of EN 60 335-1 and EN 60967
EN 61000-6-2	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments
EN 61000-6-3	Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standards for residential, commercial and light-industrial environments

The complete technical documentation is available.

Skinnskatteberg, 22-10-2014



Mats Sándor
Technical Director

2 Warnings

The following admonitions will be presented in different sections of the document:

Danger

- Make sure that the mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections and maintenance work must be carried out by an authorized installer and in accordance with local rules and regulations.

Warning

- The system should operate continuously, and only be stopped for maintenance/service.
- The installation of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulations.
- Beware of sharp edges during mounting and maintenance. Use protective gloves.
- All though the Mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill.
- Make sure that filters are mounted before starting the unit.
- This product must only be operated by a person which has suitable knowledge or education within this field or carried out with the supervision of a suitably qualified person.

Caution

- Do not connect tumble dryers to the ventilation system.
- Duct connections/duct ends must be covered during storage and installation.

3 About this document

This installation manual concerns air handling unit type SAVE VSR 300/500 manufactured by Systemair AB.

The manual consists of basic information and recommendations concerning the design, installation, start-up and operation, to ensure a proper fail-free operation of the unit.

The key to proper and safe operating of the unit is to read this manual thoroughly, use the unit according to given guidelines and adhere to all safety requirements.

4 Product information

4.1 General

The SAVE VSR 300/500 is a heat recovery ventilation unit, with a built in rotary heat exchanger. The SAVE VSR 300/500 is suitable for houses with up to 240/360 m² heated living area.

The SAVE VSR 300/500 supplies filtered outdoor air to residential areas and extract air from bathroom, kitchen and wet rooms.

4.2 Transport and storage

The SAVE VSR 300/500 should be stored and transported in such a way that it is protected against physical damage that can harm panels etc. It should be covered so dust, rain and snow cannot enter and damage the unit and its components.

The appliance is delivered in one piece containing all necessary components, wrapped in plastic on a pallet for easy transportation.

4.3 Technical Data

4.3.1 Dimensions and Weight

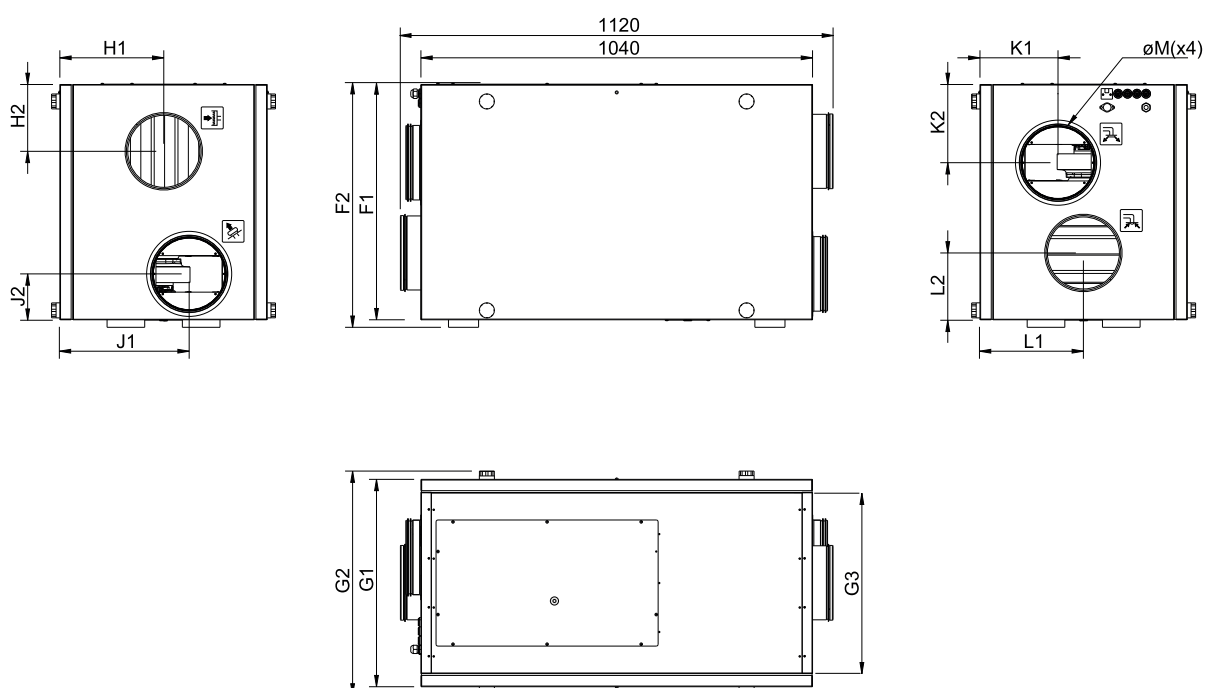


Fig. 1 Dimensions and weight

Measures in mm and weight in kg.

Model	F1	F2	G1	G2	H1	H2	J1	J2	K1	K2	L1	L2	$\varnothing M$	G3	Weight
VSR 300	578	598	461	505	231	188	307	112	160	177	281	136	160	392	61
VSR 500	628	648	551	595	276	178	345	123	207	208	276	179	200	482	72

4.3.2 Duct connections

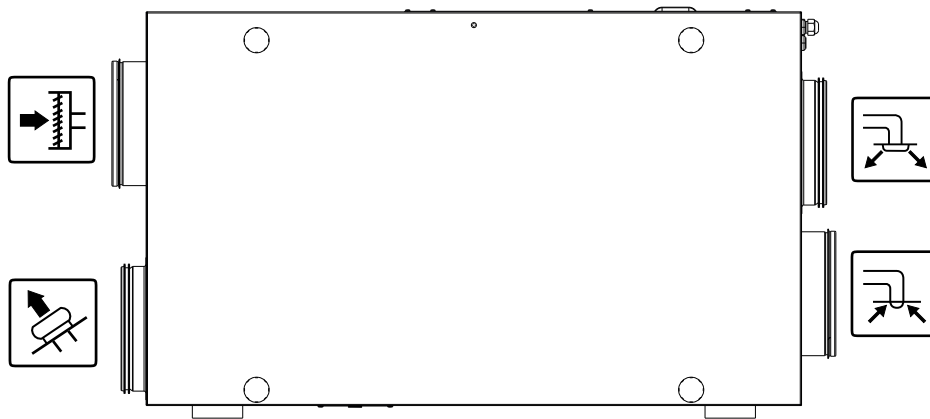






Fig. 2 Duct connections

Symbol	Description	Symbol	Description
	Supply air		Outdoor air
	Exhaust air		Extract air

4.3.3 Power consumption and fuse size

SAVE VSR 300/500 come with 1670 W installed re-heater battery.

Model	VSR300	VSR500
Re-heater	1670 W	
Fans	166 W	338 W
Total power consumption	1836 W	2008 W
Fuse	10 A	13 A

5 Installation

This section describes how to install the unit correctly. To ensure a proper and fail-free operation, it is important that the unit is installed according to these instructions.

5.1 Unpacking

Verify that all ordered equipment are delivered before starting the installation. Any discrepancies from the ordered equipment must be reported to the supplier of Systemair products.

5.2 Where/how to install

The SAVE VSR 300/500 should preferably be installed in a separate room (e.g. storeroom, laundry room or similar.), but can also be installed in the loft space.

When choosing the installation position, consideration must be taken that the unit requires regular maintenance. Flooring boards must be mounted up to and under the unit. Light and mains supply should be installed. Leave free space for removing of inspection doors and for taking out main components inside the unit.

The SAVE VSR 300/500 are supplied with approximately 1 m cable and plug for 230V, single phase earthed connection.

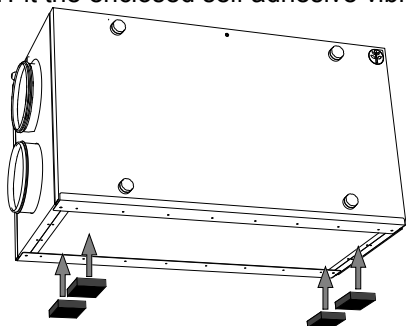
Recommended installation location for the outdoor air intake is the northern or eastern side of the building and with a distance to openings for discharge of stale ventilation air, kitchen ventilator, central vacuum system, waist water drainage and other pollution sources like exhaust from traffic etc. Stale discharge air should ideally be led via a roof unit to the outside and with a good distance to any outdoor air intake, windows etc.

Note:

If the passage to the installation location is narrow, remove the side covers and the side cover support brackets.

5.3 Installation procedure

1. Make sure that the surface is flat and horizontal and that it supports the weight of the unit. Perform the installation in accordance with local rules and regulations.
2. Fit the enclosed self adhesive vibration dampers on the unit.



Mount according to the enclosed **Vibration Damper Quick Guide**.

3. Lift the unit in place



Warning

Beware of sharp edges during mounting and maintenance. Use protective gloves.

Consider the unit weight when mounting!

4. Connect the unit to the duct system. Make sure that all necessary accessories are used to create a functional ventilation solution.



Warning

The installation of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulations.

5.4 Condensation drainage

In general no condensation drainage is needed for rotational heat exchangers at dry conditions. However, if a lot of humid air is present in the residence, a condensation drainage might be needed. Drainage connection is available as an accessory and can be ordered separately.

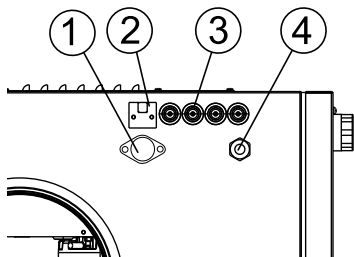
Note:

The drainage connection is plugged in the bottom of the unit at delivery. To use the drainage: elevate the unit from the floor, remove the rubber seal and connect the water hose. Connect the water hose to the sewer. The water can not be led straight to the sewer without a water trap.

5.5 External connections on the unit

Two of the connections on the main print card are wired to plugs on the unit casing:

- connection to an external control panel through a modular connector.
Maximum cable length: 50 m.
Cable type: Flat 4-conductor CEC Phone cable.
- connection to DI 3 with possibility to configure the fan speeds individually through a potential free on/off switch



1. Connection to DI 3 through an on/off switch
2. Connection to control panel
3. Cable glands
4. 230V cable

6 Commissioning

Connect the unit electrically to the mains with the enclosed plug.

6.1 Control panel

Connect the unit electrically to the mains with the enclosed plug and check that it starts up correctly.

The control panel is used to make the necessary adjustments.

An external control panel can be connected on the top of the unit.

The illustration below shows the control panel with a short description.

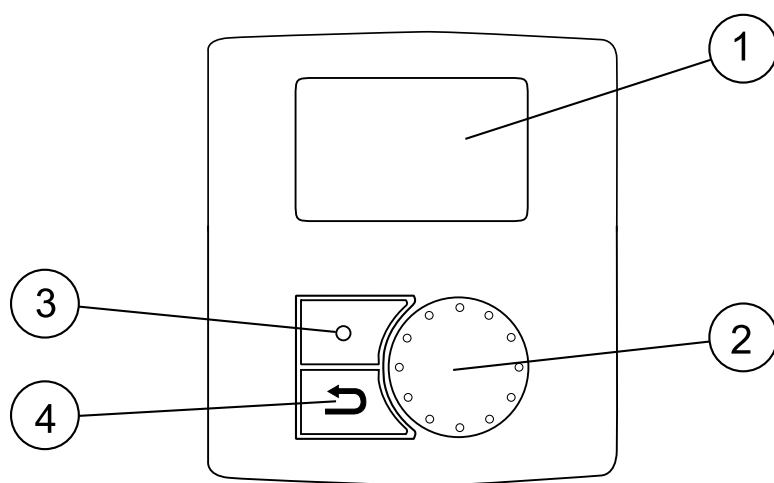
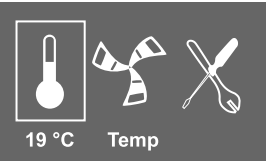
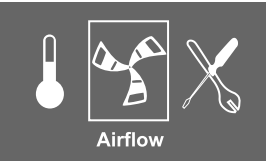





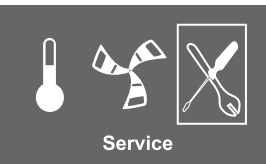
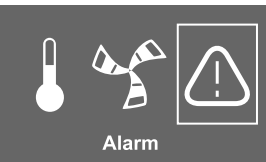


Fig. 3 Control panel

Position	Description	Explanation
1	Display	Shows symbols, menus and settings
2	SELECTION knob	Move through the menu lists or change settings and values by turning the knob left or right
3	ENTER button	ENTER menu choices or settings by pressing the button
4	RETURN button	Step RETURN in the menu levels and to abort an initiated parameter change and restore the original value by pressing the button

6.1.1 Display symbols

Symbol	Description	Explanation
	Temp	<p>Illustrates the current set-point for supply air temperature (from completely empty to filled symbol).</p> <p>Turn the SELECTION knob to choose temperature.</p> <p>Press ENTER to save the setting.</p>
	Airflow	<p>Illustrates the current airflow. The airflow can be set manually in 5 steps: Off, Low, Nom, High and Auto.</p> <p>Turn the SELECTION knob to choose airflow.</p> <p>Press ENTER to save the setting.</p> <div style="display: flex; justify-content: space-around; align-items: center;">      </div> <div style="display: flex; justify-content: space-around; align-items: center;"> A B C D E </div> <p>A. Ventilation off.¹</p> <p>B. Low ventilation: Can be used when leaving the building for a longer period</p> <p>C. Nominal ventilation: Will give required air change under normal conditions.</p> <p>D. Maximum ventilation: To increase the airflow if necessary.</p> <p>E. When demand control is activated, fans should go to "auto mode" and regulate after the pre-setting for the demand control settings.</p>
	Service	<p>Press ENTER to access the service menu.</p>
	Alarm	<p>Press ENTER to access the alarm list.</p>

1. The fan can be set to OFF by activating manual fan stop. See service menu description under functions.

Warning

It is not recommended to activate manual fan stop (set fan to OFF) in standard households. If manual fan stop is activated, the unit should be provided with dampers in exhaust and fresh air ducts to avoid cold draught and risk of condensation when the unit has been stopped.

6.2 Start up wizard

The **Start up Wizard** is a step-by-step configuration tool that starts automatically when the SAVE VSR 300/500 is started for the first time or when:

- a factory reset is performed
- a new print card is installed (spare part)
In this case the unit type must be entered (SAVE VSR 300/500)

The airflow in the Start up wizard can be set by either l/s, m³/h or a percentage with the Fan control.

- If Airflow System curve is chosen, the settings will be in l/s, m³/h and system curves are selected.
- If Airflow % is chosen, the settings will be in percentage. System curves are not selectable.

6.2.1 Procedure

1. Turn the SELECTION knob to choose language and press ENTER	Languages Language ENGLISH
2. Choose unit type, this choice is only present if a new print card is installed (spare part) or when a factory reset is performed.	Type SAVE VSR 300/500
3. Set date and time	Time/Date YY/MM/DD Date: 12/09/12 Time: 10:00 Weekday: Sat
4. Select heater: None/Electrical/Water	Heater Pre-heater: YES/NO Reheater: None/Electrical/Water
Note: This choice is available only after a factory reset, see chapter 6.2.2, or when a new print card is installed.	
Note: Pre-heater is only available for VTC200.	

5. Fan control.

Turn the SELECTION knob to select the type of fan control you prefer, *System curve* (l/s) or percentage (%) and press ENTER.

Commission by %, see step 7.

Note:

System curves are not selectable when (%) is chosen.

Note:

Before setting the system curve, see chapter 6.3 for details.

This function is implemented in the unit to compensate the flow values for different system pressures.

Supply Fan (SF): Total value range: 1–20.

For G3 type filter: 11–20,

For F7 type filter: 1–10.

VSR300 default curve: 3

VSR500 default curve: 3

Extract Fan (EF): Value range: 1–10

VSR300 default curve: 3

VSR500 default curve: 3

Note:

The factory installed filters are of filter quality F7 for the supply air and G3 for the extract air filter.

Air filters are accessories and can be obtained from the installer or wholesaler.

The filter type is labelled on the top of the filter.

Fan control, Airflow

System curve

EF: 1–10

SF: 1–20

6. Here it is possible to change the Nominal/High/Low airflow on the Extract air fan (EF) and Supply air fan (SF). Airflow in l/s.

When settings are done, press ENTER.

VSR300:

Airflow l/s	EF	SF
Nom	70	70
High	88	88
Low	42	42

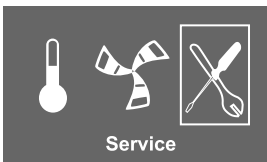
VSR500:

Airflow l/s	EF	SF
Nom	105	105
High	146	146
Low	63	63

7. Here it is possible to change the Nominal/High/Low airflow on the Extract air fan (EF) and Supply air fan (SF). Airflow in %. System curves not selectable.	VSR300 and VSR500:	EF	SF
When settings are done, press ENTER.	Airflow %		
	Nom	50	50
	High	100	100
	Low	25	25

6.2.2 Perform Factory reset

How to perform a factory reset if necessary:

<p>1. Enter the service menu by selecting the service symbol in the display and press ENTER.</p>	
<p>2. Go to password and enter the password, default 1111</p> <p>Use the SELECTION knob for each digit and confirm with the ENTER button after each set digit and choose NO for the system not be locked.</p>	<p>Password</p> <p>Password XXXX</p> <p>Locked YES/NO</p>
<p>3. Go to Functions and select Factory Reset</p>	<p>Functions</p> <p>Factory reset</p>
<p>4. Turn the SELECTION knob so YES is shown and press ENTER.</p>	<p>Factory reset</p> <p>Really reset? YES/NO</p>
<p>5. ACCEPTED is shown in the display window</p>	<p>ACCEPTED</p>
<p>6. The Start up Wizard starts after approximately 10 seconds</p>	

6.3 System curves

A system requires different pressures at different airflows, which can be represented by a system curve. The intersection between the system line and the fan curve, is the unit's working point. It is showing the airflow the system is going to have. Every change in the pressure of the ventilation system, will give rise to a new system curve.

If you choose to do the commissioning with l/s or m³/h, you need to know the system's pressure in order to choose a suitable system curve.

6.3.1 VSR300 Supply air, F7 type filter

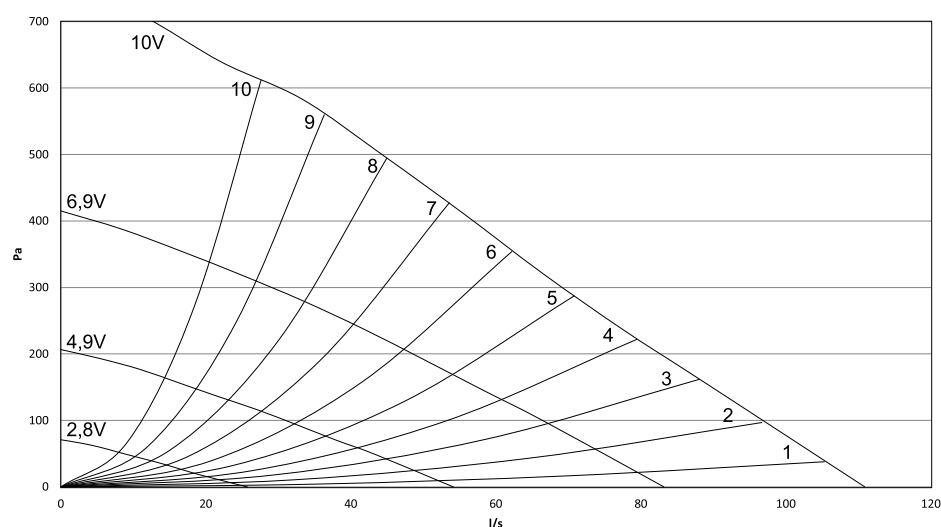


Fig. 4 Supply air system curves, F7 type filter

6.3.2 VSR300 Supply air, G3 type filter

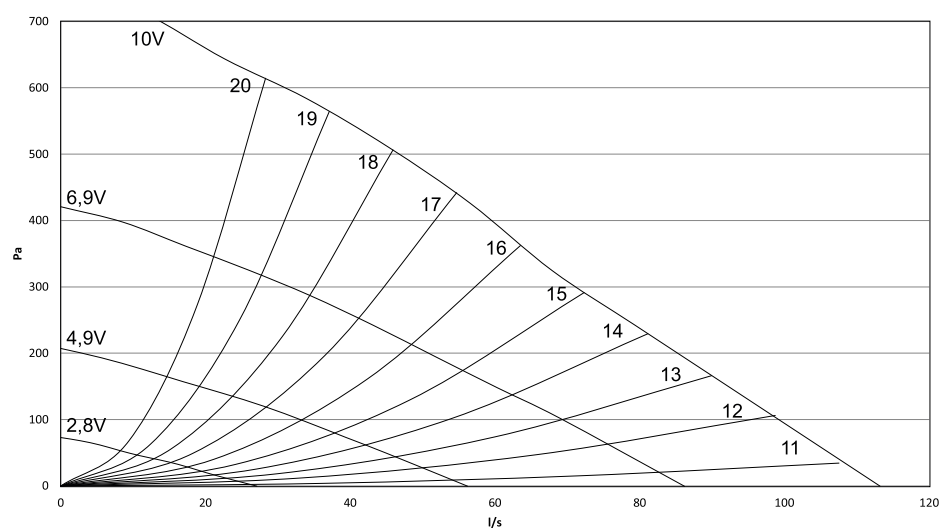


Fig. 5 Supply air system curves, G3 type filter

6.3.3 VSR300 Extract air, G3 type filter

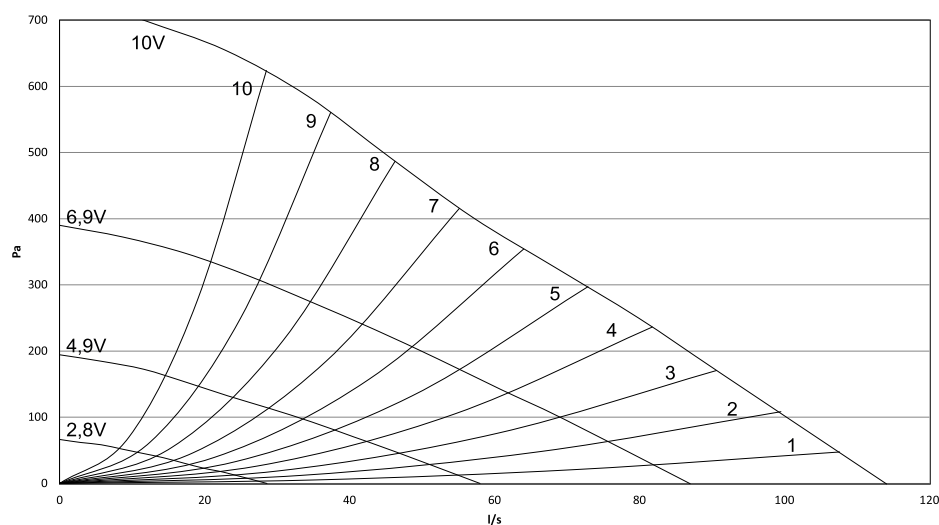


Fig. 6 Extract air system curves, G3 type filter

6.3.4 VSR500 Supply air, F7 type filter

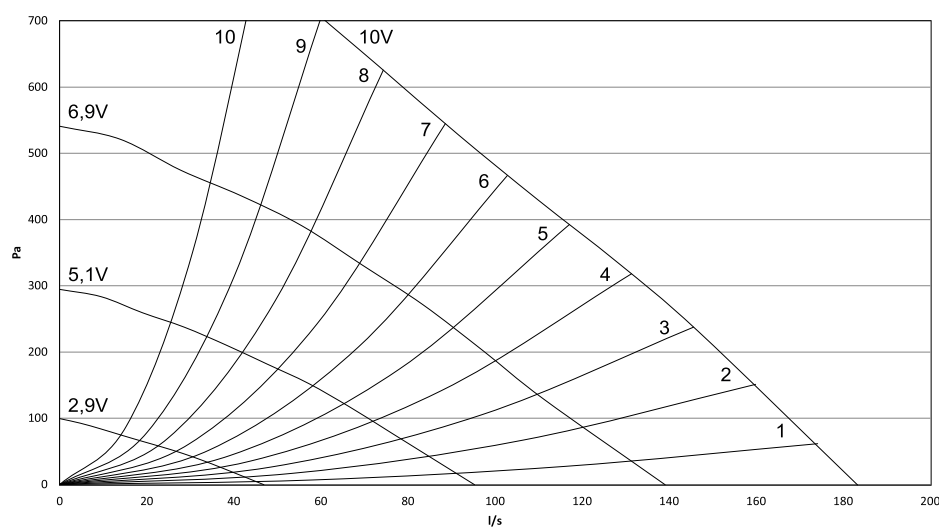


Fig. 7 Supply air system curves, F7 type filter

6.3.5 VSR500 Supply air, G3 type filter

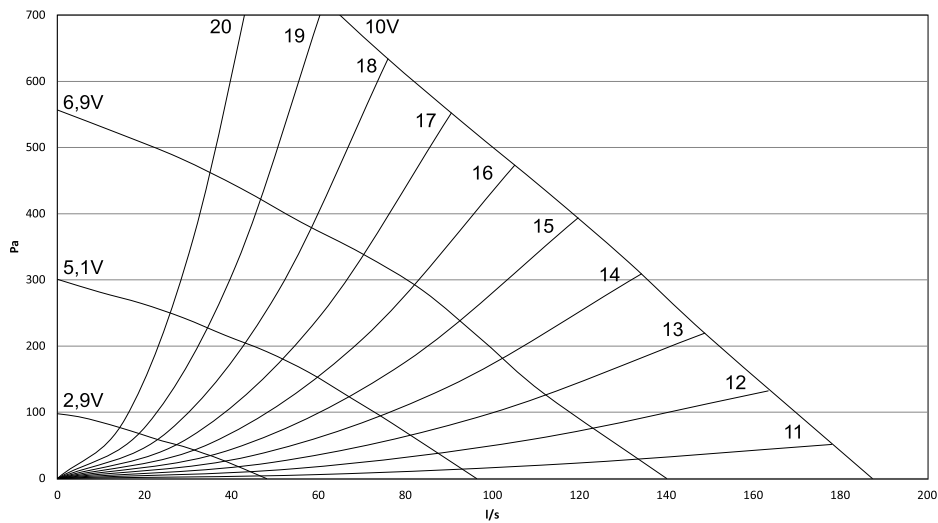


Fig. 8 Supply air system curves, G3 type filter

6.3.6 VSR500 Extract air, G3 type filter

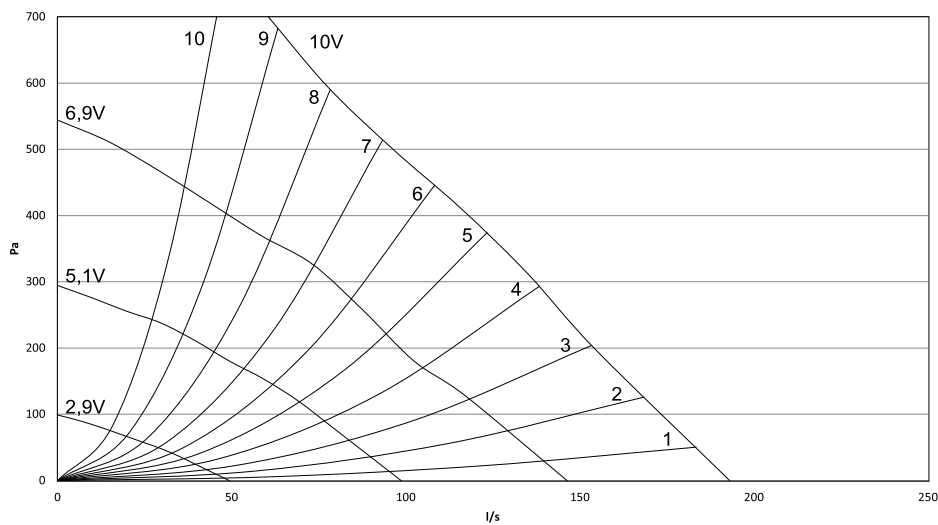


Fig. 9 Extract air system curves, G3 type filter

6.4 Airflow settings

The airflow can be set by either l/s, m³/h or a percentage.

- If **Airflow System curve** is chosen, the settings will be in l/s, m³/h and system curves are selected.
- If **Airflow %** is chosen, the settings will be in percentage. System curves are not selectable.

The airflow may be adjusted in five steps; off, low, nominal, high and auto. These settings control the output signals to the supply- and extract fans. The factory setting on each speed steps are:

VSR300	VSR500
<ul style="list-style-type: none"> • Off: 0 l/s • Low: 42 l/s • Nom: 70 l/s (at approximately 90 Pa) • High: 88 l/s • Auto: In Auto mode the fans regulates in accordance with the pre-settings for the demand control. 	<ul style="list-style-type: none"> • Off: 0 l/s • Low: 63 l/s • Nom: 105 l/s (at approximately 90 Pa) • High: 146 l/s • Auto: In Auto mode the fans regulates in accordance with the pre-settings for the demand control.

These levels are possible to change in the service level. See service menu overview (chapter 8.5) under functions.




Note:

It is **not** recommended to activate manual fan stop (set fan to OFF) in standard households. If manual fan stop is activated, the unit should be provided with dampers in exhaust and fresh air ducts to avoid cold draught and risk of condensation when the unit has been stopped.

The fan can be set to OFF by activating manual fan stop. See service menu overview (chapter 8.5) under functions.

See below airflow diagram to get an idea of how the airflow corresponds to each voltage output. This shows a fan performance diagram displaying performance curves for supply air and extract air.

6.4.1 Setting the airflow

1. Go to the service menu by using the SELECTION knob	<div><div></div><div>Service</div></div>																																
2. Enter the service level by typing the password, default 1111. Use the SELECTION knob for each digit and confirm with the ENTER button after each set digit and choose "NO" for the system not be locked.																																	
3. Go to: Functions Choose: Fan control	Password Password XXXX Locked YES/NO Functions -> Fan control																																
4. Turn the SELECTION knob to select the type of fan control you prefer, System curve (l/s) or percentage (%) and press ENTER. Fan control by Airflow %, see step 7.	Fan control Airflow %																																
5. Fan control by Airflow l/s. When settings are done, press ENTER. Choose System curve. Choose system curve.	Fan control Airflow System curve SF: 3EF: 3																																
6. Press RETURN once the system curves has been set and go to Airflow l/s or m³/h. When settings are done, press ENTER.	<table><tr><td>VSR300:</td><td>EF</td><td>SF</td></tr><tr><td colspan="3">Airflow l/s</td></tr><tr><td>Nom</td><td>70</td><td>70</td></tr><tr><td>High</td><td>88</td><td>88</td></tr><tr><td>Low</td><td>42</td><td>42</td></tr></table> <table><tr><td>VSR500:</td><td></td><td></td></tr><tr><td colspan="3">Airflow l/s</td></tr><tr><td>Nom</td><td>105</td><td>105</td></tr><tr><td>High</td><td>146</td><td>146</td></tr><tr><td>Low</td><td>63</td><td>63</td></tr></table>			VSR300:	EF	SF	Airflow l/s			Nom	70	70	High	88	88	Low	42	42	VSR500:			Airflow l/s			Nom	105	105	High	146	146	Low	63	63
VSR300:	EF	SF																															
Airflow l/s																																	
Nom	70	70																															
High	88	88																															
Low	42	42																															
VSR500:																																	
Airflow l/s																																	
Nom	105	105																															
High	146	146																															
Low	63	63																															
7. Fan control by Airflow % When settings are done, press ENTER.	<table><tr><td>VSR300:</td><td>EF</td><td>SF</td></tr><tr><td colspan="3">Speed %</td></tr><tr><td>Nom</td><td>50</td><td>50</td></tr><tr><td>High</td><td>100</td><td>100</td></tr><tr><td>Low</td><td>25</td><td>25</td></tr></table> <table><tr><td>VSR500:</td><td>EF</td><td>SF</td></tr><tr><td colspan="3">Speed %</td></tr><tr><td>Nom</td><td>50</td><td>50</td></tr><tr><td>High</td><td>100</td><td>100</td></tr><tr><td>Low</td><td>25</td><td>25</td></tr></table>			VSR300:	EF	SF	Speed %			Nom	50	50	High	100	100	Low	25	25	VSR500:	EF	SF	Speed %			Nom	50	50	High	100	100	Low	25	25
VSR300:	EF	SF																															
Speed %																																	
Nom	50	50																															
High	100	100																															
Low	25	25																															
VSR500:	EF	SF																															
Speed %																																	
Nom	50	50																															
High	100	100																															
Low	25	25																															

6.5 Defrost level settings

The unit is equipped with an automatic defrost function that is activated when there is risk of icing in the area around the heat exchanger. The setting shown in table 1 determines how aggressive the defrosting will be. Default factory defrost mode setting is 0.

Note:

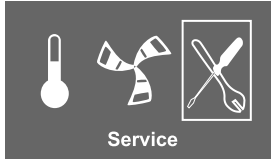
The heat exchanger should withstand low outdoor temperatures, but in those cases where icing can occur please be aware of that the defrost setting will generate an under pressure in the building. Using a fire place, be aware that there is a possible risk of smoke being extracted into the living areas due to under pressure if defrosting is activated.

Table 1: Defrost levels

Defrost mode	Level of humidity	Relative humidity indoors ¹	Description
0			Defrosting is turned off. Note: This setting is not valid for units equipped with counter flow heat exchangers.
1	Min	<20%	Dry areas, such as warehouse buildings with few people or industrial buildings that don't use water in their production process.
2	Low	30% - 40%	Office buildings
3	Medium	41% - 60%	Apartments or houses with normal humidity ²
4	High	61% - 80%	Apartments or houses with high humidity
5	Extremely high	>80%	Buildings with very high humidity level.


1. Relative humidity in the extract air at cold outdoor temperatures.
2. In newly constructed houses it might be necessary with a higher defrost level during the first winter period.

6.5.1 Setting the defrost level

<p>1. Go to the service menu by using the SELECTION knob.</p>	
<p>2. Enter the service level by typing the password, default 1111. Use the SELECTION knob for each digit and confirm with the ENTER button after each set digit and choose "NO" for the system not be locked.</p>	<p>Password Password XXXX Locked YES/NO</p>
<p>3. Go to: Functions Choose: Defrosting</p>	<p>Functions Defrosting</p>
<p>4. Set the mode</p>	<p>For units with rotating heat exchangers: Defrosting Mode 0-5</p> <p>For units with counter flow heat exchangers: Defrosting Mode 1-5</p>
<p>Note: This setting is only valid for units equipped with counter flow heat exchangers.</p> <p>5. Select if unbalanced airflows are allowed in the building during the defrost cycle. Choose between YES and NO. Default is YES.</p>	<p>Allow unbalance YES/NO</p>

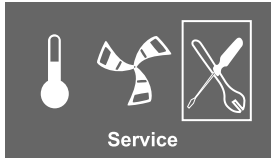
6.6 Programming the Week schedule

Set the week schedule according to below procedure:

1. Go to the service menu by using the SELECTION knob.	
2. Enter the service level by typing the password, default 1111. Use the SELECTION knob for each digit and confirm with the ENTER button after each set digit and choose "NO" for the system not be locked.	Password Password XXXX Locked YES/NO
3. Go to: Week program	Service Week program
4. Choose Week program again.	Week program Airflow
5. Set week day and time you want the unit to be in ON level. Two periods per day can be programmed. The rest of the time the unit will be in OFF level.	Week program Day: MON Per 1: 07:00 16:00 Per 2: 00:00 00:00
6. Go back to the previous dialogue frame with the RETURN button and go down to Airflow.	Week program Airflow
7. Set which airflow the fan is supposed to be running in the ON level, choose between Low, Nom, High or Auto. Set which airflow the fan is supposed to be running in the OFF level, choose between OFF, Low, Nom or High. Note: If an electrical re-heater battery is installed and active and the unit is shut down from the control panel, for example by choosing OFF. When the unit is in OFF level in the week program, the fans will continue to run for 3 minutes, to prevent the heater from triggering the over heat protection sensor, before they stop.	Airflow On level: low/nom/high/auto Off level: off/low/nom/high
8. Step back with the RETURN button until you reach the main menu display	

6.7 Ext/Force run

It is possible to program extended time you want the unit to work under operation conditions other than determined by the week schedule.

1. Go to the service menu by using the SELECTION knob.	
2. Enter the service level by typing the password, default 1111. Use the SELECTION knob for each digit and confirm with the ENTER button after each set digit and choose "NO" for the system not be locked.	Password Password XXXX Locked YES/NO
3. Go to: Ext/Force Run	Service Ext/Force Run
4. Set the time in minutes the unit is to run in extended/forced running mode. Value range: 0–240 minutes, in steps of 10 min. Set the airflow for this mode. Choose between Low, Nom or High. Default value: Nom.	Ext/Force Run Minutes: 0 Airflow: Nominal

6.8 Extra functions

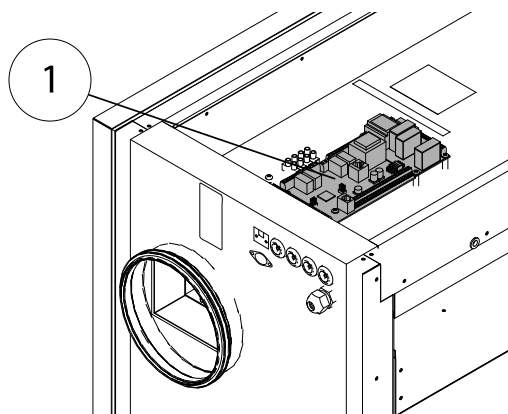
The unit is equipped with a number of extra on/off functions which can be activated from external on/off switches that can be connected to the digital inputs on the main print card (see wiring diagram).

The following possibilities are available:

- **Digital inputs 1–3:** By connecting on/off switches to these inputs it's possible to choose 3 individual airflow settings in the control panel depending on a temporary need for the building (for example lowering the extract air airflow when an open fire place is used). See chapter 8.5.
DI 3, is prepared and already connected internally for easy access on the unit. See chapter 5.5.
- **Digital input 4:** Makes it possible to disable the electrical re-heater
Activated input means that the electrical re-heater is disabled.
- **Digital input 5:** Activate the Extended/forced running function with a impulse switch. The function overrides current airflow settings and runs in forced mode according to the settings in *Service* -> *Ext/Force run*. Choose between Low, Nom and High for this function.
The input is calculated based on the signals from an impulse-switch. If a standard switch is used, the countdown of the set time starts when the switch is switched off.
- **Digital input 6:** Control for the exchanger, used by the system
- **Digital input 7:** Home/leave, switching on this activates low energy support control. The heat exchanger is always operating according to the setpoint value. Is there a re-heater activated it will operate according to the lowest setpoint value (12 °C). The function is used when the building is uninhabited for a longer period.
It is recommended to connect either of DI1, DI2 or DI3 in parallel with DI7. If DI7 is activated, set the fans speed to min. Airflow settings are done when configuring DI1, DI2 or DI3.

See menu options in "Service menu Overview" (chapter 8.5).

6.9 Electrical connections



1. Main print card

6.10 External connections on the print card

Connection terminals for external equipment can be found on the main print card inside the electrical connection box.

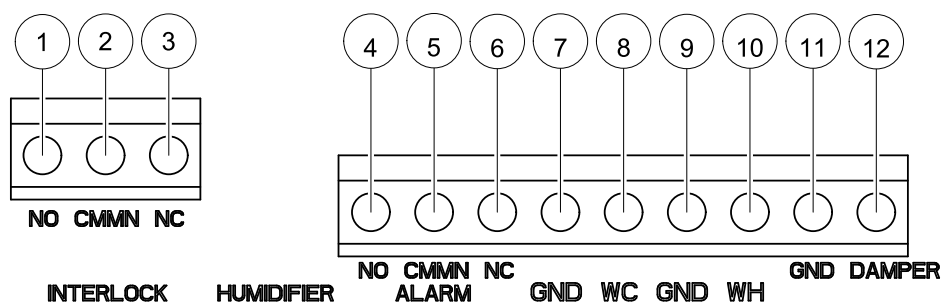


Fig. 11 External connections on the print card

Position	Description	Remark
1	Outdoor/exhaust air damper	Normally open, 230 V 1~, max 1 A
2	Outdoor/exhaust air damper	Reference
3	Outdoor/exhaust air damper	Normally closed, 230 V 1~, max 1 A
4	Sum alarm	Normally open, 24 V, max 1 A
5	Sum alarm	Reference
6	Sum alarm	Normally closed, 24 V, max 1 A
7	GND	Reference
8	Water cooler control signal (AO2)	0–10 V DC
9	GND	Reference
10	Water heater control signal (AO1)	0–10 V DC
11	GND	Reference
12	Bypass damper (AO3)	If used, 0–10 V DC

7 Before starting the system

When the installation is finished, check that:

- The unit is installed in accordance with the instructions
- The unit is correctly wired
- Outdoor and exhaust air dampers and silencers are installed and that the duct system is correctly connected to the unit
- All ducts are sufficiently insulated and installed according to local rules and regulations
- Outdoor air intake is positioned with sufficient distance to pollution sources (kitchen ventilator exhaust, central vacuum system exhaust or similar)
- All external equipment are connected
- The unit is correctly configured and commissioned
- The week schedule and airflow settings are correctly programmed.

8 Operation

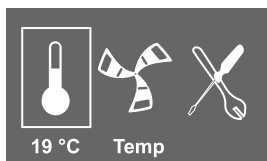
8.1 Setting the temperature

The supply air temperature is set manually in steps of 1 K in the main menu display by choosing the temperature symbol.

If an electrical re-heater is installed the temperature setpoints are:
12-22 °C. For installed water re-heater the setpoints are: 12-40 °C.

If the re-heater is deactivated, the temperature steps are:
15-19 °C. Default value: 15.0 °C.

Each temperature step is illustrated by increasing the filling of the temperature symbol and the temperature is shown in the display

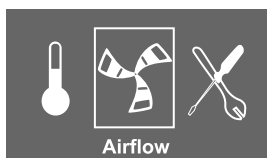


An unfilled temperature symbol will activate manual summer mode. See chapter 8.3

8.2 Manual setting of airflow

It is possible, at any time, to manually set the airflow in the main menu display. By choosing the fan symbol and confirming, it is possible to increase or decrease the airflow in 5 steps: Off, Low, Nom, High and Auto.

By doing so, you override the programmed week schedule for the unit until the end of the present time period in the week program (chapter 6.6).



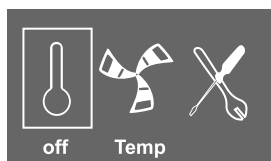
Warning

It is **not** recommended to activate manual fan stop (set fan to OFF) in standard households. If manual fan stop is activated, the unit should be provided with dampers in exhaust and fresh air ducts to avoid cold draught and risk of condensation when the unit has been stopped.

The fan can be set to OFF by activating manual fan stop. See the Installation and Service manual, chapter Service menu overview: *Manual fan stop*.

8.3 Manual and automatic summer mode

Manual summer mode occurs if no temperature step is selected. The temperature symbol on the main menu is then completely empty.



If the electrical re-heater is activated, it will switch off during manual summer mode. Manual summer mode goes automatically to step 1 (setpoint 12 °C) after two minutes if the supply air temperature is +5 °C or below.

If a water heater battery is installed and activated, the manual summer mode goes automatically to step 1 (setpoint 12 °C) if the outdoor air or supply air temperature is +5 °C or below.

The unit will automatically alternate between winter operation with heat recovery and summer operation without heat recovery.

8.4 Cool recovery

If the outdoor air is warmer than the extract air and the supply air is above the setpoint, cool recovery occurs. This condition blocks the heat regulation process.

8.5 Service menu overview

Enter the service menu by selecting the service symbol in the display.

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
Service Password	Password Password XXXX Locked YES/NO		Enter the service level by typing 1111. Use the SELECTION knob for each digit and confirm with the ENTER button after each set digit. NO will unlock the system and allow parameter changes.
Service Change Password	Change password Actual XXXX New XXXX Confirm XXXX		Set new password if necessary. In case the new password would be forgotten or misplaced it's still possible to enter the service level by writing 8642. This overrides the earlier set password.

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
Service Filter period	Filter period Time to replace: 12month Reset NO/YES		Shows selected time interval between filter change. Set Reset of the filter period to YES after completed filter change. Set time between filter changes.
Service Time/Date	Time/Date YY/MM/DD Date: 12/09/12 Time: 10:00 Weekday: Sat		Shows current set date and time. Set Correct date and time.
Service Ext/Force Run	Ext/Force Run Minutes: 0 Airflow: Nominal		Use this dialogue frame to program extended time you want the unit to work under operation conditions other than determined by the week schedule. Shows set time for extended/forced running. Shows Set airflow. Set the time that the unit is to run in extended/forced mode. Value range: 0–240 minutes. Set the airflow for this mode. Choose between Low, Nom or High. Default value: Nom.
Service Week program	Week program Week program	Week program Day: MON Per 1: 07:00 16:00 Per 2: 00:00 00:00	Program how you want the unit to operate according to the week schedule. It's possible to set 2 periods per day. Set week day and time interval for the time you want the unit to be in ON mode.
	Week program Airflow	Airflow On level: low/nom/high/auto Off level: off/low/nom/high	Use this dialogue frame to determine the ON and OFF function for the fans in the week schedule. Set ON level. Choose between Low, Nom, High or Auto. Default value: Nom Set OFF level. Choose between OFF, Low, Nom or High. Default value: Low.

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
Service Airflow log	Airflow log Level: 1-5 Reset: NO/YES SF: 140 /140 EF: 140 /140		<p>Use this dialogue frame to see how the fans have operated during the time (h) they have been active.</p> <p>The airflow are shown in 5 different levels:</p> <ul style="list-style-type: none"> • Level 1: 0% • Level 2: 1 – 29% • Level 3: 30 – 44% • Level 4: 45 – 59% • Level 5: 60 – 100% <p>Choose between the levels to see the time in hours the fans have been active in the different levels.</p> <p>Reset Yes resets the SF and EF time in the left column for all levels. The right column continues to count ahead and can not be reset.</p> <hr/> <p>Note:</p> <p>Factory reset (see Functions ->Factory reset) will not affect this function</p> <hr/>

Menu Level 1	Menu Level 2	Menu Level 3	Explanation																							
Service Functions	Functions Heater/Cooler	Heater/Cooler Pre-heater: YES/NO Re-heater: None/Electrical/Wa- ter Cooler: None/Water	Use this dialogue frame to set up the unit for heating and/or cooling. <hr/> Note: Pre-heater only available for VTC 200 <hr/> Set Re-heater to None, Electrical or Water. Set Cooler to None or Water.																							
	Functions Frost protec- tion	Frost protection Alarm limit: 7°C	Shows current set frost protection alarm limit in °C for the installed water coil. Set Alarm limit in °C. Default value: 7°C.																							
	Functions System curve	System curve EF: 1-10 SF: 1-20	This function is to compensate the flow values for different system pressures. See chapter 6.3																							
	Functions Fan control	Fan control Airflow System curve %	Select the type of fan control you prefer. Fan control by l/s, m³/h or %																							
	Functions Airflow	VSR300: Airflow l/s <table><tr><td></td><td>EF</td><td>SF</td></tr><tr><td>Nom</td><td>70</td><td>70</td></tr><tr><td>High</td><td>88</td><td>88</td></tr><tr><td>Low</td><td>42</td><td>42</td></tr></table> VSR500: Airflow l/s <table><tr><td></td><td>EF</td><td>SF</td></tr><tr><td>Nom</td><td>105</td><td>105</td></tr><tr><td>High</td><td>146</td><td>146</td></tr><tr><td>Low</td><td>63</td><td>63</td></tr></table>		EF	SF	Nom	70	70	High	88	88	Low	42	42		EF	SF	Nom	105	105	High	146	146	Low	63	63
	EF	SF																								
Nom	70	70																								
High	88	88																								
Low	42	42																								
	EF	SF																								
Nom	105	105																								
High	146	146																								
Low	63	63																								
	Fan control Airflow unit	Airflow unit l/s / m³/h / %	Default value: l/s																							

Menu Level 1	Menu Level 2	Menu Level 3	Explanation												
	Demand control	Demand control CO2 / RH Setpoint 0 ppm/0% RH P-Band 100 ppm/10%RH I-Time OFF	Demand control (menu choice or setpoint) shall only be available if CO2 or RH% sensors are detected. Those should not be needed to configure, once connected to the wireless gateway should just tell the unit (PCU-EC) there is a sensor available. Setpoint shall also be able to set to 0 to turn off demand control. Both types should be able to use at the same time, meaning 2 PI controllers. When demand control setpoint is configured, fans set to auto mode and regulate against the setpoint. The fan symbol should have the middle area empty, and the outer and inner filled. It should not be possible to change either.												
	Fan control Airflow	Settings for both VSR300 and VSR500: Airflow % <table><tr><td></td><td>EF</td><td>SF</td></tr><tr><td>Nom</td><td>50</td><td>50</td></tr><tr><td>High</td><td>100</td><td>100</td></tr><tr><td>Low</td><td>25</td><td>25</td></tr></table>		EF	SF	Nom	50	50	High	100	100	Low	25	25	Use this dialogue frame to set the airflow in %. The airflow can be set individually for each fan EF : Extract fan, SF : Supply fan Set the airflow for EF and SF for each step (Low, Nom, and High).
	EF	SF													
Nom	50	50													
High	100	100													
Low	25	25													
	Functions Manual fan stop	Manual fan stop Allow manual fan stop Y/N	Set if it should be possible to turn off the fans in the unit manually from the control panel. Chose between Y and N . If Y is selected the fans can be turned off by turning the SELECTION knob to empty fan												

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
	Functions Analog input	Analog input 1: SS 20.0 2: ETS 23.0 3: Unused 4: Unused/OT/FPS 20.0 5: OS 10.5	Shows analogue inputs from active temperature sensors. SS: Supply air temp sensor. ETS: Extract air temp sensor. FPS: Frost protection sensor. OS: Outdoor air temp sensor. OT: Overheat protection sensor.
	Functions Analog output	Analog output A01 auto/man/off A02 auto/man/off A03 auto/man/off	Shows current analogue outputs in 0–10 V to hot/cold water actuator or electrical re-heater and bypass damper. Set AO1 (Analogue output to hot water actuator or electrical re-heater) to auto, man or off. Default value: auto. Set AO2 (Analogue output to cold water actuator) to auto, man or off. Default value: auto. Set AO3 (Analogue output to bypass damper) to auto or man. Default is auto. Selecting man enables the user to manually control the actuator/damper with a 0–10 V signal. 0V completely closed and 10 V completely opened actuator/bypass damper. When used on the bypass damper the unit can be forced to go to summer mode operation (10 V).

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
	Functions Digital input	Digital input DI1 ON/OFF DI2 ON/OFF DI3 ON/OFF DI4 ON/OFF DI5 ON/OFF DI6 ON/OFF DI7 ON/OFF	Shows current setting of the digital inputs ON or OFF DI1: Fan configuration DI2: Fan configuration DI3: Fan configuration DI4: Heater deactivated DI5: Extended/forced running DI6 for rotating heat exchanger: Rotor sensor DI6 for counter flow heat exchanger: Bypass damper limit switch DI7: Home/leave
	Functions Config DI 1-3	Config DI 1-3 Default: 1 SF high EF high 2 SF low EF low 3 SF high EF low	Use this dialogue frame to set how you want the fans to react to 3 different digital inputs when they are switched on (the settings in the column to the left are examples). Potential free switches need to be connected physically to terminals on the main print card to obtain the different functions. See the wiring diagram for more information. Set the supply air fan (SF) and extract air fan (EF) individually to off, low, nom or high for digital inputs 1-3

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
	Functions DI 4-7	DI 4-7 4 Stop heat 5 Ext run 6 Damper/Rotor 7 Home/Leave	<p>DI 4-7 are default set from factory and can't be changed by the user. Below follows a short description of each function.</p> <p>DI4: Makes it possible to disable the electrical re-heater. Activated input means that the electrical re-heater is deactivated.</p> <p>DI5: Activate the Extended/forced running function. The function overrides current set airflow settings and runs according to the settings in Service-> Ext/Force run. Choose between Low, Nom and High for this function. The input is calculated based on the signals from an impulse-switch. If a standard switch is used, the countdown of the set time starts when the switch is switched off.</p> <p>DI6 for rotating heat exchanger: Rotor sensor. Used by the system to monitor the rotor rotation.</p> <p>DI6 for counter flow heat exchanger: Bypass damper limit switch. Used by the system to detect the damper position.</p> <p>DI7: Activates low energy support control. Heat exchanger operating by the adjusted setpoint value and a active re-heater has support control for the lowest setpoint. (12 °C)</p> <p>The function is used when the building is uninhabited for a longer period.</p> <p>It is recommended to connect DI7 and DI1 or DI3 in parallel. If DI7 is activated, set the fans speed to min. Airflow settings are done when configuring DI1/DI3.</p>

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
	Functions Digital output	Digital output 1: SF 67% 2: EF 67% 3: Rot ON/OFF 4: ALARM Y/N 5: Dmp Y/N 6: Heater Y/N	Shows The current settings of digital outputs 1–6 (the settings in the column to the left are examples). 1: SF 67%: Current set speed of the supply air fan (shown as percentage of the maximum speed). 2: EF 67% Current set speed of the extract air fan (shown as percentage of the maximum speed). 3: Shows if the rotor is active or not. Unused for unit with counter flow heat exchanger. 4: Alarm Y/N: Indicates if the sum. alarm is active or not 5: Dmp OFF: Outdoor/exhaust air damper is on or off. 6: Heater Y/N: Indicates if the electrical re-heater is active or not.
	External sensors	External sensors CO2: 0 ppm – RH: 0% –	Last valid value is presented for the bounded sensors. Highest actual sensor signal presented via –/modbus/wireless. Unbound sensor presented as – (none). Modbus sensors has priority over wireless sensors.

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
	Functions External DI	External DI Active Wireless: DI1/..DI20 Assign to: -/DI-5/DI7	<p>External DI menu only available if one or several "Input modules" are bound to the system. Active wireless DI1-20 is depended on actual node for "Input module".</p> <p>Node shown in "Wireless" menu which node representing DI module inputs.</p> <p>Eg. Node 1 type: DI. Active wireless DI1 and DI2 Node 2 type: DI. Active wireless DI3 and DI4 Node 10 type: DI. Active wireless DI19 and DI20</p> <p>Active wireless DI1-20 are available to assign to DI1-5 and DI7 for the system in the air handling unit.</p> <p>DI6 is not available as selection, used by the system in the air handling unit.</p> <p>Unsigned DI is shown as – (none).</p> <p>To reset a previously assigned DI, select "–" and confirm the selection.</p>

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
	Functions Wireless	External DI Note: 1 Type: None State: No Network Data: 0	Wireless system status. Node: Shows number of bound wireless module. Type: None/UI: User Interface (Control panel)/DI: Digital Input module/CO2: CO2 sensor module/RH: RH sensor module. State: No Network: No gateway connected to the system for air handling unit/Unbound: No bonded module/OK: Successful binding of module Data: The actual value from module/Comm fail: Communication failure, see manual for actual module for troubleshooting. To reset all bound nodes, see user manual for Gateway Wireless.
	Functions Defrosting	For rotating heat exchanger: Defrosting Mode 0-5 For counter flow heat exchanger: Defrosting Mode 1-5 Allow unbalance YES (Active defrosting cycle)	Use this dialogue frame to set how aggressive you want the defrosting function to operate (see chapter 6.5).
	Functions Modbus	Modbus Address 1 Baud 9600/19200 Parity None/Even/Odd	Information about Modbus communication and variables can be found in the Modbus user manual for residential units in the online catalogue at www.systemair.com .
	Functions Factory reset	Factory reset Really reset? YES/NO	Use this dialogue frame to return to factory settings. Set YES or NO <hr/> Note: This will erase all your personal settings that have been done for the unit.

Menu Level 1	Menu Level 2	Menu Level 3	Explanation
Service Language	Languages Language ENGLISH		Use this dialogue frame to return to select your local language. Set Language by turning the SELECTION knob.
Service Versions	Version VSR 300/500 CD EC Appl. XXX XXX Boot XXX XXX		Shows current software versions <hr/> Note: The software versions are just an example and may differ in a specific unit. <hr/>
Service Alarms	Alarms Fan Y Frost N Damp Y Pb Fail N Temp N Filter Y		Shows the alarm list and which alarms that have been triggered (indicated by Y). See alarm list chapter 9.5

9 Service

9.1 Warnings

Danger

- Make sure that the mains supply to the unit is disconnected before performing any maintenance or electrical work!
- All electrical connections and maintenance work must be carried out by an authorized installer and in accordance with local rules and regulations.

Warning

- The system should operate continuously, and only be stopped for maintenance/service
- Although the mains supply to the unit has been disconnected there is still risk for injury due to rotating parts that have not come to a complete standstill
- Beware of sharp edges during maintenance. Use protective gloves
- Make sure that filters are mounted in their place before running the system
- This product must only be operated by a person which has suitable knowledge or education within this field or carried out with the supervision of a suitably qualified person.

9.2 Internal components

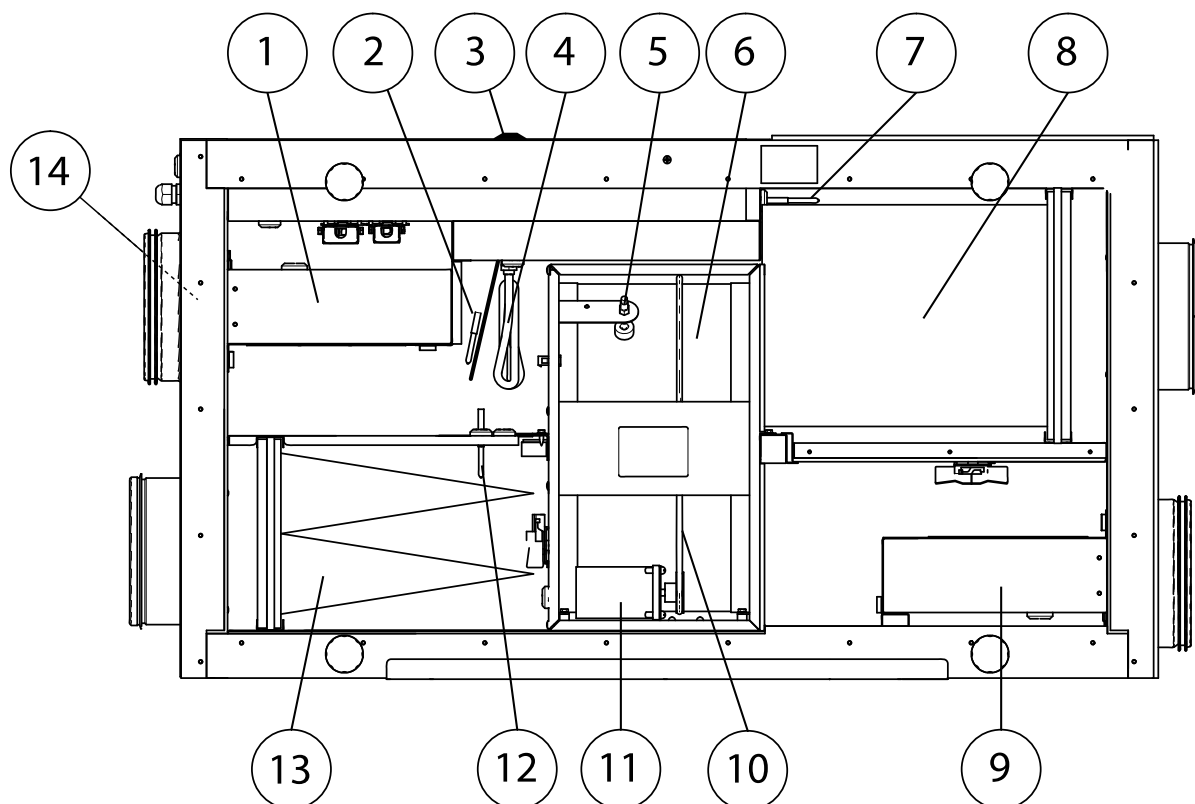


Fig. 12 Internal components

Position	Description
1	Supply air fan
2	Overheat protection sensor
3	Overheat protection reset button
4	Internal electrical re-heater
5	Rotor sensor
6	Rotating heat exchanger
7	Outdoor air sensor
8	Supply air filter
9	Extract air fan
10	Drive belt for rotating heat exchanger
11	Rotor motor
12	Extract air sensor
13	Extract air filter
14	Supply air sensor

9.3 Component descriptions

9.3.1 Fans

The fans have external rotor motors of EC type which can be steplessly controlled individually 20–100%. The motor bearings are life time lubricated and maintenance free. It is possible to remove the fans for cleaning, see “User Manual” for more information.

9.3.2 Filters

The factory installed filters are of filter quality F7 for the supply air and G3 for the extract air filter. The filters need to be replaced when polluted. New sets of filters can be acquired from your installer or wholesaler.

Filter quality G3 can be installed for supply air filtering.
The filter type is labelled on the top of the filter

Note:

If type G3 filters are used instead of F7 , the system curve for Supply Fan (SF) must be changed:

For G3 type filter: 11–20, for F7 type filter: 1–10. See chapter 6.3.

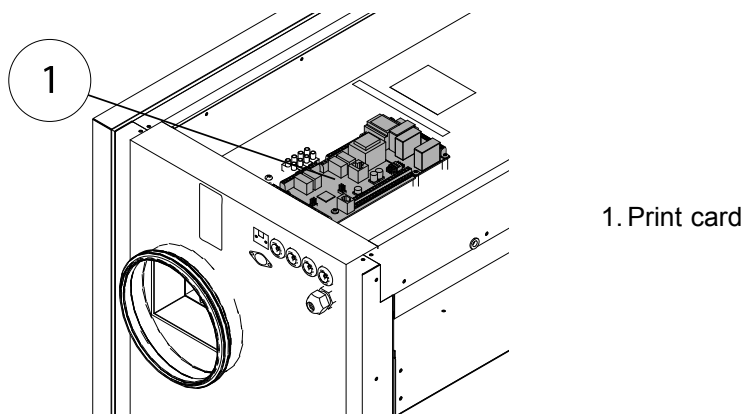
9.3.3 Heat exchanger

SAVE VSR 300/500 is equipped with a highly efficient, rotating heat exchanger. Required supply air temperature is therefore normally maintained without adding additional heat.

The heat exchanger is removable for cleaning and maintenance, see “User Manual” for more information.

9.3.4 Print card

The main print card controls the functions and set temperatures of the unit.



It is possible to connect external accessories to terminals in the print card. See wiring diagram for more information.

9.3.5 Temperature sensors

Four temperature sensors (NTC, 10 kΩ at 25°C) are included in the unit from factory and positioned in the corresponding air chambers.

The sensors are connected to the main print card. See wiring diagram for more information.

9.3.6 Electrical Re-heater battery

The re-heater battery is positioned in the supply air chamber.

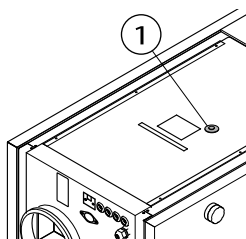
The re-heater is activated by a relay and switches on if the supply air temperature is 2°C lower than the set point and switches off if one or more of the following conditions are met:

1. If the supply air temperature is more than 2°C above the set point
2. If the over heat protection is activated or the sensor is malfunctioning
3. If the emergency thermostat is triggered or broken
4. If the supply air sensor is in error state
5. If the supply air fan is not running
6. If the heater is set to not active in the menu.

9.3.7 Overheat protection reset button

If the supply air temperature is low, it can indicate that the over heat protection is triggered. The overheat protection can be reset by pressing the reset button .

The button is placed on the top cover.



1. Reset button

9.3.8 Water Re-heater battery

A water re-heater battery (optional), which can be acquired as an accessory, can be controlled by the analog output WH (0-10 V DC). The water heater uses AI 4 for frost protection (OT, "Over heat protection", changes to FPS , Frost protection in the menu).

The frost protection sensor should then be a strap on surface sensor situated on the return water tube.
Sensor type: TG-A130

The supply air sensor (SS) at AI 1 must be replaced with a duct sensor which can be acquired as an accessory. Sensor type: TG-K360. See wiring diagram for more information.

Only electrical or water re-heater is allowed, i.e. if a water re-heater is selected, the electrical re-heater is deactivated and vice versa.

Note:

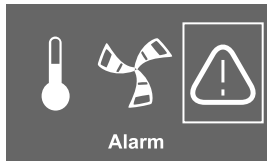
If a water re-heater battery is installed we strongly recommend you to also install an outdoor air damper with a spring return actuator.

9.3.9 Water Cooler

A water cooler (optional) can be acquired as an accessory and be controlled by the unit. If a water cooler is installed the supply air sensor (SS) at AI 1 must be replaced with a duct sensor which can be acquired as an accessory. Sensor type: TG-K360. See wiring diagram for more information.

9.4 Trouble shooting

A warning triangle with text in the display indicates an alarm. Turn menu selector to the warning triangle and press confirm twice to view the alarm.



If problems should occur, please check the items below before calling your service representative.

Malfunction	Action
Fans do not start	<ol style="list-style-type: none"> 1. Check the display for alarms. 2. Check fuse for main power supply in the distribution box for the building and all the quick connectors are connected in the unit (quick connectors for supply and extract air fans). 3. Check that the week program is in ON mode. The week program might be in OFF mode with the airflow set to OFF (chapter 6.6) 4. Check if one of the digital inputs 1–3 (DI 1–3) is active and set to off. This would force one or both fans to stop depending on the setup (chapter 8.5).
Reduced airflow	<ol style="list-style-type: none"> 1. Check the display for alarms. 2. Check setting of airflow in the control panel (chapter 6.1.1). 3. Check week program (chapter 6.6). 4. Check if one of the digital inputs 1–3 (DI 1–3) is active and set to off. This would force one or both fans to stop depending on the setup (chapter 8.5). 5. Check if auto mode is active. Auto mode reduces the airflow if actual value from external sensor/sensors is lower than demand control set-point. 6. Check filters. Change of filters required? 7. Check diffuser/louver openings. Cleaning of diffusers/louvres required? 8. Check fans and heat exchange block. Cleaning required? 9. Check if the buildings air intake and roof unit (exhaust) have been clogged. 10. Check visible duct runs for damage and/or build up of dust/pollution.
The unit cannot be controlled (control functions are stuck)	<ol style="list-style-type: none"> 1. Reset control functions by pulling out the main power supply plug for 20-30 seconds. 2. Check the modular contact connection between the control panel and the main print card.

Low supply air temperature	<ol style="list-style-type: none"> 1. Check the display for alarms. 2. Check set supply air temperature in the control panel. 3. Check the analogue inputs in the service menu to verify that the temp sensors are ok (chapter 8.5). Go to Functions > Analogue input and verify the temperature readings from the temp sensors. 4. Check that Home/Leave function is disabled DI 7. 5. Check if the over heat protection is triggered: <ul style="list-style-type: none"> • For units with built-in heater: If necessary, reset by pressing the red reset button. • For units with external heater: For reset, see the manual for the external electrical heater. 6. Check if digital input 4 (DI 4) is set to off. This would force the electrical re-heater battery to be switched off (chapter 8.5) 7. Check if the extract filter must be changed. 8. At very cold outdoor conditions an electrical pre heating battery might be necessary. This can be acquired as an accessory. 9. Check the balance between the supply and extract air
Noise/vibrations	<ol style="list-style-type: none"> 1. Clean fan impellers. 2. Check that the screws holding the fans are tightened. 3. Check that the anti vibration pads are fitted at the bottom of the unit.

9.5 Alarm list

Alarm	Explanation	Do the following
Fan	Indicates error on either supply or extract air fan.	<p>The alarm is displayed in the control panel.</p> <p>Contact your installation company or place of purchase.</p>
EMT/Frost	Indicates triggered frost protection (in case of installed water heating battery) or triggered overheat protection (in case of installed electric re-heater battery).	<p>A triggered frost protection alarm results in the following:</p> <ul style="list-style-type: none"> • Both fans stop. • Outdoor and exhaust air dampers closed. • Water valve opens completely (10 V signal goes out to the actuator). <p>The unit will restart once the water temperature reaches +5°C above the set frost protection temperature.</p> <p>A triggered over heat protection gives an alarm in the control panel.</p> <p>Reset by pushing the red button placed on the top cover of the unit..</p> <p>If the problem continues contact your installation company or place of purchase.</p>

Alarm	Explanation	Do the following
Rotor	Indicates a rotor malfunction.	<p>The alarm is displayed in the control panel.</p> <ul style="list-style-type: none"> • If the rotating heat exchanger has stopped. Check the rotor belt. See chapter 9.6 • If the heat exchanger is still rotating, check that the quick connector for the sensor is connected and that there is an air gap of 5-10mm between the sensor and the magnet. <p>Adjust the gap if necessary.</p> <p>If the alarm persists, the rotor sensor may be faulty.</p> <p>Contact your installation company or place of purchase.</p>
PbFail	<p>Error in connection with relay card for the electrical re-heater (if installed and activated).</p> <p>The overheat protection sensor, automatic reset (ET2) may be triggered due to high temperature.</p>	<p>The alarm is displayed in the control panel.</p> <p>The heater will not be activated.</p> <p>For triggered ET2, wait 10–15 min. If the error remains, contact your installation company or place of purchase.</p>
Temp	Malfunction in one or more of the temperature sensors.	<p>The alarm is displayed in the control panel.</p> <p>Contact your installation company or place of purchase.</p>
Filter	Time for filter change.	<p>The alarm is displayed in the control panel.</p> <p>Change filter according to instructions in the user guide.</p>

9.6 Replacing rotor drive belt

If the alarm **Rotor** is raised, see chapter 9.5, the rotor drive belt may be damaged or broken.

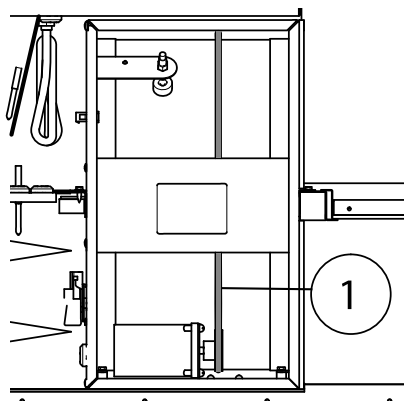


Fig. 13 Rotor drive belt

The replacement drive belt (1) is adjustable and delivered with a nipple attached in one end.

1. Stop the unit by disconnecting the mains.
2. Open and remove the side cover.
3. Remove the broken drive belt.
4. Use tape to attach the drive belt to the rotating heat exchanger, and rotate the exchanger by hand to get hold of the drive belt.

5. Remove the tape and put the "empty" end on to the nipple. Press the ends firmly towards each other and tighten the nipple.
6. Pull the drive belt on to the belt pulley and rotate the exchanger by hand. Check that the belt pulley rotates.

Note:

If the drive belt slips, the drive belt may be too long and needs to be shortened. Cut the drive belt 5 mm and go to step 5.

7. Replace and lock the side cover and connect the unit to mains.
8. Check that the alarm has ceased on the Control Display.

Note:

If the alarm remains, check the rotor sensor.

Systemair AB reserves the right to make changes and improvements to the contents of this manual without prior notice.



Systemair AB
Industrivägen 3
SE-739 30 Skinnkatteberg, Sweden

Phone +46 222 440 00

Fax +46 222 440 99

www.systemair.com